Newsletter of the North American Mycological Association

THE MYCOPHILE

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President's Message

Recently, people have asked me why I'm so passionate about NAMA. I usually say that I spend so many hours each day because I see an organization with so much potential. I consider my efforts as an investment in reviving an association which has not reset its goals and mission for over a decade.

As I start the third year of my term as President, there are many encouraging signs pointing toward a more workable, responsive organization in the future. I'll go into those in a bit.

Becky Rader was our Executive Secretary for three years. She did a great job making sure The Mycophile was printed and mailed during that period, and working with all the people in NAMA as well as being the NAMA representative who responded to hundreds of inquiries from the public. Thank you, Becky! (See the article on Rebecca on p. 8-10).

As I mentioned in the last issue of *The Mycophile*, Ann Bornstein, who has served as Membership Secretary for three decades, is passing the torch. The first mention I see in past issues of NAMA's newsletter of Ann's taking on the responsibilities of serving as Membership Secretary is in 1984. We couldn't have asked for a more diligent, involved, and devoted Membership Secretary. Ann has been a friend and mentor for many people in NAMA. Her input, willingness to get the job done, and efficiency are amazing. Membership is a huge role, and she has fulfilled it beautifully.

NAMA's Regions now have new boundaries and are more balanced – the first change of our regions since our founding. We have new leadership of the Foray Committee (Thank you, Maxine Stone!). Elinoar Shavit is the new Chair for the Medicinal Mushrooms Committee (Thank you, Elinoar!). We have created a new Mycoflora Committee to coordinate club fungal survey activities (Thank you, Richard Jacob!) for the North American Mycoflora Project. You will hear more about the Mycoflora Committee in the next newsletter.

NAMA is committing a huge investment in a redesigned and more user friendly website, and in so doing, creating a member management system which will automate some of our organizational processes. A dynamic website requires the input and energy of lots of people. I hope you can contribute.

NAMA' programs for loan have evolved through the creation of slide, VHS, CD and DVD programs. Because of changing technology and the availability of all the current programs created by Michael Beug on one DVD or thumb drive, we have decided to end the loan part of the program. I would like to thank Steve Rock for taking over this NAMA service to affiliated clubs, providing an assessment of use, and managing the program last year. If you visit the programs page on the NAMA website (http://namyco.org/education/edprog.html), you can still see descriptions of these programs, and where to purchase Michael's DVD.

(Continued p. 5)

FORAYS & OTHER EVENTS

This section of **The Mycophile** is reserved for publicizing the annual forays of NAMA affiliated clubs and other events you may be interested in learning about. If you would like us to list your club's next big event, contact us with details you would like displayed here and send to Dianna Smith, editor of NAMA's bi-monthly newsletter, *The Mycophile:* dianna.smith@comcast.net.

January 9-11: 41st ANNUAL FUNGUS FAIR at Louden Nelson Community Center, Santa Cruz, CA. For more information see http://ffsc.us/fair.

January 17-19: **SOMA Mushroom Camp**: Fees include meals, classes, and workshops (some classes and workshops have additional fees). Info and registration: http://www.somamushrooms.org/camp/registration/index.

July 30-August 2: NEMF's 39th Annual Sam Ristich Foray sponsored by the Connecticut Valley Mycological Society (CVMS) will take place at Connecticut College in New London, CT. For future updates and registration check www.cvms.org.

August 2-8: Mushroom Identification for New Mycophiles: Foraging for Edible and Medicinal Mushrooms workshop with Greg Marley and Michaeline Mulvey at the Eagle Hill Institute in Maine. Contact office@eaglehill.us.

September 4-7: COMA's Annual Clark Rogerson Foray will take place again in the beautiful Berkshires near Copake NY, where Northwest CT, Southwest MA and NY meet. Check www.comafungi.org for updates.

September 6 -12: Ascomycetes, Waxcaps, and Other Fall Fungi of New England workshop with Alan Bessette and Arleen Bessette at Eagle Hill Institute, Maine. For information on attending the course contact office@eaglehill.us.

September 18-20: **Western PA Mushroom Club's 15th Annual Gary Lincoff Mushroom Foray**. Further information can be found at http://wpamushroomclub.org/.

September 24-27: NAMA Blue Ridge Foray sponsored by the Ashville Mushroom Club and the Mushroom Club of Georgia at the YMCA Blue Ridge Assembly in Black Mountain, NC. Registration will start in early spring. In the meantime, save the dates!

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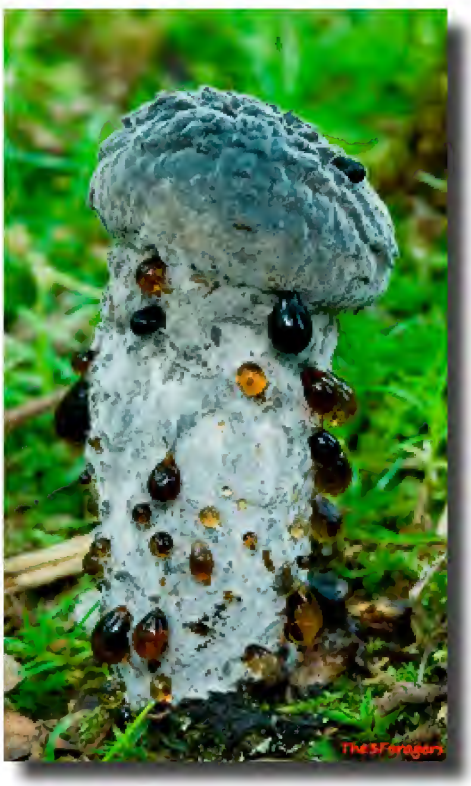
2014 ANNUAL PHOTOGRAPHY CONTEST

in the Pictorial Category

First Place: Daniel Winkler: ***Xeromphalinoid with ghost primordia***
Second Place: Daniel Winkler: ***Phallus indusiata***
Third Place: Robert Gergulics: ***Strobilomyces floccopus***

1st place Daniel Winkler: *Xeromphalinoid with ghost primordia*



3rd place Robert Gergulics: *Strobilomyces floccopus*

2nd place Daniel Winkler: *Phallus indusiata*

2014 ANNUAL PHOTOGRAPHY CONTEST

in the **Pictorial Category**

Honorable Mention: Mark Bower: ***Mycena leaiana***
Honorable Mention: Sonny Cardinal: ***Hericium coralloides***
Honorable Mention: Jon Gergulics: ***Mycena leaiana***
Honorable Mention: Joshua Hutchins: ***Panellus stipticus***
Honorable Mention: Joshua Hutchins: ***Sparassis americana***
Honorable Mention: Mary Smiley: ***Polyozellus multiplex***
Honorable Mention: Daniel Winkler: ***Favolaschia sp.***

HM Mark Bower: *Mycena leaiana*

HM Sonny Cardinal: *Hericium coralloides*

HM Daniel Winkler: *Favolaschia sp.*

HM Joshua Hutchins: *Sparassis americana*

HM John Gergulics: *Mycena leaiana*

HM Joshua Hutchins: *Panellus stipticus*

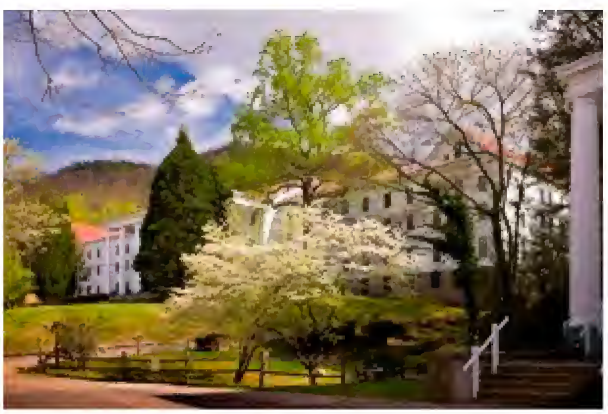
HM Mary Smiley: *Polyozellus multiplex*

President's Message *(Continued from p. 1)*

I would welcome a discussion among NAMA members about two issues: 1) developing our programmatic mission in the future, and 2) developing solid relationships with parks and parks managers, and with like-minded "green" organizations such at the Sierra Club, Nature Conservancy, and The Trust for Public Land.

There are several newly established groups focusing on ecology, conservation, and sustainable mycology. How are we meeting these goals, and are these topics for NAMA to address? Older organizations like the ones mentioned above have a long track record of conservation, and the Trust for Public Land was founded to create parks and protect land for people to enjoy. How do we ensure that mycology is part of their vision? Besides the obvious research goal of fungal surveys, what are we doing with the data we collect during the course of the survey? Are we going back to those park managers with species lists and letting them know the role of the fungi on that list to help them provide better stewardship?

NAMA's original model was intensive taxonomy and systematics, with the best professionals like Rolf Singer, Joe Ammirati and Howard Bigelow, Ken Cochran, LR Hesler, Orson Miller, Alex Smith, Harry Thiers, and Clark Rogerson - teaching folks like John Cage, Kit Skates, Gary Lincoff, Manny Salzman, Michael Beug, and Benjamin Woo. These names are just a sampling of the membership list from 1972; I'm leaving out a lot more folks and am probably mixing up some generational stuff. The mycologists we see year after year at our annual forays are the best mentors to pass their wisdom to the next generation. Our role, one of them at least, is to enable the meeting of these top mycologists with members to develop field and identification skills, and facilitate life-long collaborations. In my ideal framework, this transition happens through the North American Mycoflora project. The tools are different, and the way we communicate is different, but we need to adjust to modern times.



Meeting Rooms at the YMCA Blue Ridge Assembly

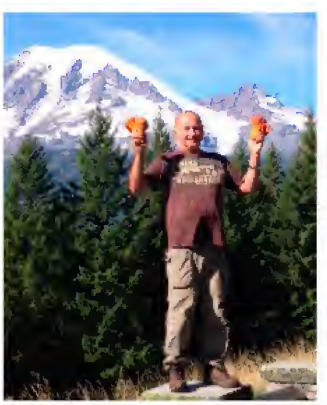
I look forward to seeing many of you at our next annual foray, September 24-27, 2015 at the YMCA Blue Ridge Assembly in Black Mountain, North Carolina. We'll be based at a beautiful conference center situated on 1,200 acres of wooded mountainside surrounded by mountain streams, wildflowers, ridges, coves, and spectacular views. Alan Bessette has agreed to serve as our foray Chief Mycologist. Registration will open in the Spring, so stay tuned!

Finally, just a reminder that it's time to **renew your dues**! We've made it easy to renew online: http://namyco.org/join/index.html.

David Rust, NAMA President

Suggested Reading
"Underground Connection: Fungi and Pines in Peril" by Dr. Cathy Cripps in ***American Forests:***

http://www.americanforests.org/our-programs/endangered-western-forests/underground-connection-fungi-and-pines-in-peril/



NAMA Foray Joy! Photo: Sharon Yager

Social Media, Youth and Fungi

By Dianna Smith

Unless you spend oodles of time communicating with mushrooming friends and cyberspace acquaintances through social media sites like *Facebook* (instead of being in the woods), you may be unaware that curiosity about fungi among young folks mostly in their twenties has literally mushroomed! The number of sites devoted to identifying and displaying fungi photos is astounding and new ones spring up daily. Burgeoning interest in foraging for edible fungi and other wild edibles for the table is a reflection of the movement to support local organic farming and avoid the perceived dangers of consuming vegetable products sprayed with chemicals and fertilizers traditionally utilized by large multinational food producing corporations. Others are drawn to learn how to prevent or cure disease by consuming fungi purported to increase immunity, prevent or cure diseases. A number of social media and websites sites have been erected by entrepreneurs passionate about teaching others methods of cultivating mushrooms for themselves or the local market, as well as incorporating mushroom farming in their home gardens. Inspired by the writings and TED talks of Paul Stamets, there are also numerous media savvy volunteer organizations founded by converts to his visionary ideas, such as *Radical Mycology, Earth Repair, Fungi for the People* and the *Amazon Renewal Project.* All are actively hosting demonstrations, workshops and programs designed to promote grassroots research into and practice of mycoremediation, mycofiltration, and reforestation by means of inexpensive and readily accessible techniques. Followers are acquiring basic skills that can be used at home and in their communities to help mitigate biological, industrial and chemical environmental pollution of earth's land, rivers and oceans, and diminishing species diversity.

Another group of inspired fungiphiles is *Female & Fungi* featured below. Their mission is to create a healthier, more egalitarian and connected world, where all genders are encouraged to participate in promoting mycology. Their website provides an opportunity for women in particular to contribute essays on mycological topics of interest to them. It seems that the underground networks of communication manifested by mycorrhizal fungi with trees and other plants, serve as a powerful metaphor that inspires and gives hope to these young enterprising pioneers. We hope to encourage many of these citizen scientists to become active members of NAMA and its associated clubs. Many of them will be the next generation's leaders in mycology.

Female & Fungi: A Radical Exploration Between the Cross-Sections

By Mara Penfil and Andrea Rossi

First, we would like to introduce ourselves – or at least some of "ourselves" since this group is a growing community of AMAZING womyn from around the world! We, Mara Penfil and Andrea Rossi, are from two different ends of the country with vastly different ecological and geographical landscapes, but with a very similar love of all things female and all things fungi (except for athletes foot…yuck!). We met in the summer of 2013 in a small town tucked away in the towering mountains of Colorado during a very special festival dedicated to all the things dear to a mycophiliac's heart. Telluride Mushroom Festival was a wonderful weekend filled with good food, forays, fun, and of course the most beloved of organisms, fungi. One evening while drifting in-and-out of dream-speak and reflecting on the previous three days, we found ourselves wishing there had been a little more female speaker presence (our count: 5 stand-alone mycology-focused speakers). We realized that this was a common occurrence in many scientific and agricultural conferences and gatherings that we had attended. That is when we stumbled over a concept that immediately awakened our senses and spirit.

The idea was simple: create a safe space for LOTS of womyn in the mycological community to come together and share stories, research, theories, and dreams. One week and many late-night brainstorming sessions later, *Female & Fungi*, the on-line presence for womyn was born.

So, now we're here, one website later, quite a few people larger, and still driven by the same dream that started it all off in the first place. And, it almost seems silly to say, but we really couldn't (nor wouldn't) be here without you…we welcome each person to be an integral part of this project in whatever way they choose and desire to be - whether that is as a spectator, contributor, author, editor, photographer, poet, musician, conversationalist, and, yes, we even welcome those people who love (gasp!) plants more than fungi because everybody knows it takes an ecosystem to raise a child.

Female & Fungi hosts content written by volunteer authors covering book reviews, interviews, mycelial artistic expression, historical women mycologists, health, opinions and critiques, and personal stories. We hope to eventually gather enough interest and support to host a *Female & Fungi* sponsored mycology conference to connect amateur mycologists with experienced mentors and provide positive tools to address the gender bias in science through their personal contributions to mycology. We also hope to provide support for other mycological organizations and events by helping them to create safe and inclusive environments for women.*

We openly welcome any questions you may have at womynsmycology@gmail.com and we will answer them to the best of our ability! To learn more, visit www.femaleandfungi.com. For questions or contributions, email womynsmycology@gmail.com.

ABOUT THE FOUNDERS

Mara Penfil: Currently living in the Northern Great Lakes Bioregion, Mara Penfil is a community organizer who merges traveling, education, and volunteer work to further the food, social and environmental justice movements. With a growing zeal for all things fungal, she spends her time with various mycelial networks across the country working to build mycological interest, understanding and community. Mara's passion to blend social and environmental justice efforts led her to co-found *Female & Fungi*, the on-line presence for the ever growing Womyn's Mycological Community.

Mara Penfil

Andrea Rossi

Andrea Rossi: Inspired through her experiences working in environmental youth leadership, community organizing, and working in holistic health care, Andrea lives to instill long-lasting links between food, culture, and the environment in subsequent generations. Her current community engagements focus on the intersection of holistic public health and city planning, and give her optimism for the possibility and multiple utilities of community-powered food systems. She is enthusiastic about nourishing urban food production and connecting to nature within the city.

Among the articles included on the *Female & Fungi* website are the following that are of special interest:
"Flora W. Patterson: The First Woman Mycologist at the USDA" by Amy Rossman
"Cultivating Networks for Bioremediation in the Ecuadorean Amazon"
"Mushroom Muse in the Midwest: Lisbeth Glatfelter" by Patrick Harvey
"Overflowing with Mushrooms: Women in Eighteenth & Ninteenth Century Art" by Mara Penfil
"Mystical Glow in a Dark, Dark Woods" by Debbie Viess
And the website's most recently honored 'Womyn of the Month', "Rebecca Rader of Appalachia and Earthen Treasure-Hunts" by Andrea Rossi. It can be seen on the next page of *The Mycophile*!

*Editor's note: The *Female & Fungi* founders might be surprised to learn of the growing number of renowned women mycologists contributing to advances in this field. Female doctoral students studying mycology may currently outnumber males!

Rebecca Rader of Appalachia and Earthen Treasure-Hunts

By Andrea Rossi

MORELS

It is spring in the Appalachians and Montgomery County, VA residents peer outside their windows and see the snow slowly melting, the first green buds in the distant hills. A certain breed of springtime fervor is in the air. The biodiverse Central Appalachians and neighboring Smokey Mountains, nearly a temperate rainforest, home to endemic flora and fungi that traveled down from the north during the last ice age, set the backdrop for the awakening green. This time of year is defined as the most beautiful, by resident Rebecca Rader, graduate of nearby Radford University and long-time resident of Montgomery County. She terms this land a "naturalist's paradise," home to bird and butterfly enthusiasts, native plant and wildflower societies, Master Naturalists, a Sierra club chapter and more, but there is another organism that draws Rebecca and neighbors' devout attention: mushrooms.

For Rebecca, her love lies deep in the ground. The first signal arrives when the tall, symmetrical tulip-poplars burst into life, the first native trees to leaf-out in spring, heralding the long-awaited, brief advent of one of the most sought-after mushrooms. Local residents throughout the Appalachian mountains pull out their maps, contact neighbors, and prepare for an earthen-hunt for the mushrooms known to make men travel for weeks to other counties, women to arise early in the morning with baskets in hand, a hunt repeated each year with more fervor and some fever: morel-hunting.

"In our area, most mushrooms come up in late summer and fall, but morels come in early spring. Morels signal an end to winter and new beginnings; it's a great time to spend in the mountains- it is so beautiful." Rebecca, past Executive Secretary of the North American Mycological Association (2011-2014), is part of a "citizen science" effort to collect data for the burgeoning interest of the scientific community, and has a long history with morel hunting. "I have a deep love and connection with them. I love that they are intertwined with the roots of the associative tree. Morels can be mycorrhizal and symbiotic in that way*, or even saprophytic. The morels that we hunt are mycorrhizal, by-and-large, and are associated with different trees in different parts of the country. The organism is living in the soil with the tree roots, year after year after year, shooting up fruiting bodies for such a short period of time, that it is magical." The process of the hunt, understanding where morels live, the times when they will most likely appear, furtively mapping sightings, charting the progress of fruiting bodies from the south to the north, and their consistently elusive nature, creates an intoxicating relationship, a driven connection with morels. "There may be a 3-week window in a certain spot that it may appear," explains Rebecca, "it is so magical to be rewarded by finding them. It's a Fever! I have a lot of friends that are completely consumed with it at this moment." For some morel hunting has even become tradition, a sort of 'rite of spring,' according to Rebecca.

Morchella americana (syn. M. esculentoides)

* Please note that currently no studies exist that confirm speculation that any known species of morel is mycorrhizal.

BEGINNINGS

It was 1997 and Rebecca was browsing around her local library. She stumbled upon some books about mushrooms and decided to go into the park next to library to see what she could see. From that day forward, she became completely engrossed in mycology. It would be 2 years later that she would cross paths with Dr. Orson Miller, and his wife and co-author, Hope Miller. At the time, Dr. Miller was the Associate Professor of Botany and Curator of Fungi at Virginia Tech, and Rebecca was encouraged as a community member to join the VT graduate students gathering and identifying mushrooms. This relationship with Dr. Miller and his wife eventually led Rebecca to the wider mycological community, through the North American Mycological Association (NAMA). "In 2004 I had gathered some Chanterelles and cooked them and my stomach started hurting. I called Dr. Miller and realized that he was not home and ended up speaking with Hope. We determined that I had not, in fact, poisoned myself, I just can't digest Chanterelles, but during that conversation, Hope encouraged me to join NAMA. She told me that, fortuitously, the annual foray was in nearby Asheville, NC that year. I went to the foray, got involved in NAMA and in 2011, I became Executive Secretary."

At the foray, Rebecca was introduced to Allein Stanley, an early member and past president of NAMA who has been involved for over 40 years, and Coleman McCleneghan, an academic mycologist. These two influential women in North Carolina offered encouragement to Rebecca as she was starting her journey, along with other important female and male mycologists. "You know what is amazing about the field of mycology? All the interconnectedness we have, a field where you can really meet your heroes, meet with the people doing the important work. Anything else you are interested in, like art or music, it would be hard. It is sort of a small community in some ways, the mycological community. I can't believe the opportunities I have had. Gary Lincoff was one of the first people I met in Asheville in 2004 and I was star-struck. Since then, I have had the opportunity to learn from him and hear him speak many times."

"Mushroom people are just the best people," expresses Rebecca, "I have met so many people who are unique and friendly and enthusiastic; I have met super intelligent people and all sorts of talent that converge around fungi. I think that people who have bothered to discover the amazing world of mushrooms probably have an edge and tend to be more creative. Maybe people that like to learn, who are interested in alternative things, like how mushrooms can save the planet, like Paul Stamets teaches."

FOR{a}GING AHEAD

"I thought I could wait for someone to do something or I could do something myself," remembers Rebecca regarding her decision to begin a local mushroom club. "I was a little scared and did not know if I was ready; I was not a professional mycologist AT ALL nor had I any formal education in mycology, but I realized if I waited until I was ready then it would never happen." Despite feeling unprepared, Rebecca forged ahead, creating a thriving mushroom club, the New River Valley Mushroom Club. "Currently, we have around 150 people that get the communications through the Google Group (sites.google.com/site/newrivervalleymushroomclub/home), but a smaller core of about 30 people that come to meetings regularly. Club members work at inventorying area fungi and adding to the existing body of mycological knowledge, including member John Ford's work on the late Dr. Orson Miller's remaining collection of specimens at the Virginia Tech Herbarium."

Some members of President Rebecca Radar's New River Valley Mushroom Club of Christianburg, VA

No matter the size of the group, being with community in mushrooms is something Rebecca sees as important to learning, but also to fostering joy and deep connection. "Studying mycology has always been fun, but I learned a lot more when I got connected with people. I had a lot of doubts when I was on my own in identification and this was in the days before internet was the source of information that it is today. Definitely joining NAMA was when I started really learning. It was very important to connect it to my life in a social way."

MOREL PHILOSOPHY

Rebecca describes her approach to philosophy and religion and purpose in life as "intuitive," and feels like that intuitive connection extends to fungi. "I feel like everybody has a path in life and sometimes it is hard to know," she says, "Sometimes I feel like I have to sort of struggle to see my path and to really listen, but if I go with the flow, there is a lot of synchronicity in my life and I feel like fungi have to do with that: the connections with people, opportunities, and our connection to the natural world." In a fast-paced society, it is easy to loose the connection to mother earth, and for Rebecca "fungi help me feel my way along this path. Modern life tries really hard to separate us from nature, from that which bears us and sustains us, but fungi, literally and figuratively, bridge that gap."

RESOURCES

Resources Rebecca suggests for aspiring mycologists or that have helped her on her own path:

- Attend the NAMA Annual Foray: Last year it was in Eatonville, Washington and was hosted by the Puget Sound Mycological Society
- Join a Local Group: there are roughly 80 NAMA affiliated clubs listed by state or province. Joining a group, Rebecca feels, is one of the best ways to learn about mycology.
- *Morels* by Michael Kuo, owner & administrator for mushroomexpert.com
- *Mushrooms of West Virginia and Central Appalachians* by William Roody
- *National Audubon Society Field Guide to North American Mushrooms* by Gary Lincoff
- *Mushrooms Demystified* by David Arora
- Attend classes like the semi-annual course she took on "Fleshy Fungi of the Highlands Plateau" with Dr. Andrew Methven at the Highlands Biological Station through Western Carolina University

ABOUT REBECCA RADER

(Email: Rebeccarader@hotmail.com)

Rebecca works full time as a wine consultant for Kroger, Christiansburg, where she manages the wine department. She also creates batik clothing, art in and on fungi, and does photorealistic portraiture with the support of her husband of 16 years, Chris. Her work can be found on Facebook and at rebeccah-raderartist.com. Outside of work, she leads groups regularly for walks and talks. When not organizing people, she enjoys meditative time for herself in the woods.

***Female & Fungi*: The What & Why of Honoring "Womyn of the Month"**

"Womyn of the Month" recognizes womyn scientists, activists, community organizers, humanitarians, and other womyn that are making a difference in the field of mycology or alongside our fungal friends. If you would like to nominate a womyn for this honor, please contact us at womynsmycology@gmail.com.

Know Your Food. Eat Local Mushrooms

By Ron Spinosa, Chair, NAMA Cultivation Committee

Are you a mycophagist? If you are a reader of *The Mycophile*, you surely are. Perhaps you were among the impressed tasters at the mycophagy events during our recent NAMA Foray at Camp Arnold in the shadow of Mount Rainier. Kudos to Rebecca Tam and crew for that fantastic spread.

OK, you're a mycophagist. Are you a locavore? A What! If you're not familiar with the term, you soon will be . "Locavore" was the Oxford American "Word of the Year for 2007." It's appearing more and more in the media. Being a locavore means simply you eat foods that are locally grown - say within 100 miles of the consumer. It coincides with the increasing popularity of farmers' markets, CSAs (Community Supported Agriculture) and food hubs. Consumers are looking for fresher, more nutritious, pesticide-free foods that haven't traveled half way round the world, and in the process, contributed to fuel use and carbon emissions. Eating and ecology are brought together in a new way! And yes, there's an app for that. There is one called "Hand to Harvest." Now iPhone® and Android™ mobile devices can connect you with local venues selling fresh fruit, veggies and other produce.

The rise of the "Eat Local, Grow Local" movement has become a boon to us mycophagists. As a result people are becoming more adventurous in their tastes, and exotic gourmet mushrooms are appearing on tables at home and in local restaurants. Besides the familiar Shiitake and Oyster mushrooms, you may encounter Lion's Mane (*Hericium erinaceous*), Enotake (*Flamulina velutipes*), Pioppino Mushroom (*Agrocybe aegerita*), King Oyster (*Pleurotus eryngii*) and Nameko (*Pholiota nameko*).

This auspicious development means that now mycophagists can be locavores! Mushroom farms are sprouting up all over the USA to supply the increasing demand. Every state of the union has at least one. Now you don't have to buy mushrooms transported from Pennsylvania, California or even China. You can visit your local farmers' market or co-op to get your fix.

I am sure some of you mycophagists have tried lions mane mushroom. It is one of my favorites. Pom-pom is another apt common name for this mushroom. It looks like a fluffy ball covered with cascades of snow white icicles. It's flesh is white and meaty. A friend tried it for the first time and said, "Wow, it tastes like crab!" Indeed it does.

Until recently, if I wanted Lion's Mane, I had to search for it in the woods - it's not too common in my area - or try to cultivate it myself, which is a daunting task. But now, Halleluiah, I can find Lion's Mane at my local farmers' market, thanks to Mississippi Mushrooms, a blossoming Midwest mushroom cultivation business.

Mississippi Mushrooms is not in the state of Mississippi, but rather near the Mississippi River in northeast Minneapolis, MN. It was started in 2012 by two enterprising entrepreneurs, the founder Ian Silver-Ramp and his partner Nik Prenevost. Mississippi Mushrooms will be featured in this article as an exemple of the way to start up and manage a successful mushroom cultivation business.

Many home cultivators, including myself, have had visions of starting a mushroom business, but few have the necessary determination, grit, and business-sense that Ian and Nik have brought to their successful endeavor. The two are both in their twenties and are recent grads from the University of Minnesota. Nik's degree is in Horticulture and Ian's is in Applied Plant Science. They teamed up in 2012 when Mississippi Mushrooms began in Ian's basement. That is where he mastered growing a modest amount of mushrooms and - inevitably - became well acquainted with the mushroom cultivator's biggest enemy, CONTAMINATION! If the dreaded green mold, *Trichoderma*, gets a foot hold in your space, it can shut you down.

Nik on the left and Dan on the right in the Mississippi Mushrooms grow room.

Mississippi Mushroom crew: Ian Silver-Ramp, Tyler Kistner and Jason Lundi

Let's jump to 2014. You see a masked figure covered head to toe in a white jump suit. He enters an air-lock. Your first reaction might be that you are in an ebola containment unit. Actually you are in the Mississippi Mushroom's current mushroom growing facility, where cleanliness rules! No mold spores allowed! Overhead you see a complicated network of silver air ducts. Not only is all the air that enters the building filtered, the outgoing air goes through a heat recovery system, which conserves significant energy during Minnesota's cold winters. It is no exaggeration when Ian says, "We have the cleanest air in Minneapolis."

The home of Mississippi Mushrooms is currently in a North Minneapolis warehouse, formerly occupied by a motorcycle gang, which got evicted. The transition from biker den to a state of the art mushroom growing facility was the result of herculean efforts, both physical and mental, by Ian and Nik. They spent months installing electrical, plumbing, and air ventilation systems. Mushroom grow-rooms were built with climate control tuned for the species of mushrooms grown. Doing most of the work themselves meant taking classes, acquiring permits and jumping through the proper hoops to bring the facility up to city codes.

Ian says one of the most important (and difficult) prerequisites for a successful start-up venture is a good business plan. The opportunity to accomplish this came through Minneapolis nonprofit organizations called Neighborhood Development Center and Northside Economic Opportunity Networks (NEON). These organizations provide entrepreneur training, access to business resources, as well as small business loans. Another source of support for Mississippi Mushrooms came through USDA urban farming grants and loans. See: http://afsic.nal.usda.gov/farms-and-community/grants-and-loans-farmers.

One of the most essential and expensive items for growing mushrooms on a commercial scale is large sterilization device such as an autoclave, a.k.a. "retort". We're talking in excess of $10,000. After struggling with a battery of pressure cookers to produce hundreds of pounds of mushrooms at a time, Ian and Nik decided to do "crowd-funding", where backers kick in various amounts of money to support a project, usually receiving a product or service in return. They initiated a Kickstarter campaign to raise funds for the retort and further expansion of their operation. You can see it here: https://www.kickstarter.com/projects/2107602253/producing-fresh-mushrooms-and-recycling-year-round.

Ian and Nik met their Kickstarter goal of $22,500, but then the monster retort they had ordered turned out to be defective and could potentially explode. They took this setback in stride and eventually found two smaller sterilizers to do the job. This solution required some retrofitting to accommodate two instead of one big retort. Anyone starting a mushroom business should expect and be prepared for roadblocks to arise. They should also be ready to use creative problem solving to work around them. The new set up was successful! Their fresh and scrumptious gourmet mushrooms are once again appearing in Minneapolis farmer's markets, co-ops, and restaurants. Ian and Nik are now aiming towards a goal of producing 500 pounds of mushrooms per week.

One of the most important aspects of Mississippi Mushroom's business plan is a commitment to sustainability and the goal of zero waste. The substrate upon which the mushrooms grown is entirely composed of recycled waste products from other local businesses. They collect spent grain from a brewery and sawdust from Wood from the Hood, a green company that reclaims discarded trees from urban neighborhoods to create beautiful, high-quality wood products. The grain and sawdust make an ideal substrate for growing a wide variety of mushrooms. After the mushrooms have exhausted the substrate, it is offered to local farmers and gardeners as compost.

Mississippi Mushrooms also plans to sell mushroom growing kits and spawn to people who would like to try their hand at mushroom cultivation at home. They are also marketing a very unique product called "Mushroom Breath". What could that be? Mushrooms, like animals to which they are related, exhale carbon dioxide. "Mushroom Breath" consists of bags of an actively growing non-fruiting strain of oyster mushroom, intended for use in green houses and hydroponic gardens. Plants really like all of that exhaled CO2!

So do you want to grow mushrooms? Maybe start a business? I hope Ian and Nik's story about launching Mississippi Mushrooms can serve as an inspiration and guide. Join the ranks of successful mushroom cultivators - let's have fresh mushrooms available locally everywhere!

To visit their web site go to http://www.mississippimushrooms.com

All photos: Mississippi Mushrooms

Amazon Mycorenewal Project

By John C. Michelotti

It was spring of 2011 and I was peeling through books on my time off searching for whatever I could find about mycoremediation and its efficacy. What I found is that I did not have enough time off to fulfill my yearning mind. I began to look for programs and internships on the subject. I found an affordable month-long course in Ecuador with a non-profit called Amazon Mycorenewal Project that was set to start in less than three weeks. I called expecting to get more information on the following year's program but instead I signed up and told my job, "See you in the fall."

I was able to do this internship because of Professor Mia Rose of Sonoma State University in California. She had co-founded the Amazon Mycorenewal Project (AMP) and created an upper level biology course entitled "Fungal Ecology in a Petroleum Pollution Gradient." A few years before, I had earned an education award through 10 months of service learning work with AmeriCorps, which I highly recommend to anyone from 18 to 25 years of age. Throughout my life, I have felt an urgency to help people and the planet. I did not know how I wanted to help but I had hoped my year with AmeriCorps would lead me toward the realization of how I could make the greatest impact given my skills and interests. After our disaster relief work in New Orleans, Habitat for Humanity construction in Alabama, fire fighting with the Nature Conservancy, and trail work with the Florida Trail, the federal government granted each of us money for higher education. The money from the education award covered my enrollment into Mia's biology course, paid for my internship, plane ticket and all other expenses. In doing so, it enabled me to pursue my passion and fulfill my hope of finding how I could help people and the planet.

The first time all the participants sat together in a hostel in Quito, I was a bit intimidated by the caliber of biologists, microbiologists, chemists, international bioremediators, students, and volunteers, though I soon found my niche in the group. We would come to know each other for much more than our names, studies/professions, and initial intentions during the month long internship in Ecuador. By the end of the month we would be a strong family willing to work towards common goals in years to come.

We visited a mushroom farm and met Ricardo Viteri who has supported AMP from its inception by providing spawn and supplies. We were led around a sunny hillside, in and out of simple incubation huts and through long fruiting rooms as Ricardo, with help from a translator, introduced us to cultivating mushrooms using low-tech methods in a tropical climate.

We traveled by van to a small village named Mindo, nestled in a valley surrounded by a mountainous rainforest. A family connected to the non-profit hosted us in their hostel, restaurant and classroom space. This is where we had our lectures on mycology, cultivation, medicinal mushrooms, mushroom ecology, mycoremediation, bioremediation with bacteria, permaculture principles, and the genetics of fungi. Hours in the classroom turned into hours of cultivation, low-tech lab work, and experiments. We grew medicinal and edible mushrooms for our host family's restaurant. We conducted experiments to remediate petroleum-contaminated soil using Pleurotus ostreatus in a proportion of 80% substrate and 20% soil which AMP had found to be ideal in prior years' experiments. Plant bioassays were set up to test the health of remediated soils, while other remediated soil samples were sent to a lab for mass spectrometer testing. Experiments were conducted to test the viability of locally accessible substrates. We took specimens of fungi growing in and near polluted areas of the rainforest and attempted sterile transfer to agar petri dishes in a jungle glove box. A jungle glove box is a low-tech sterile work space made from taping plexiglass together, sterilizing with alcohol, and using an alcohol lamp to keep tools clean. One side of the plexiglass box has two holes cut out for arms to go through and one hole on top for the flame of the alcohol lamp. If our specimens in the petri dishes had not gotten contaminated, the introduction of petroleum to the mycelium would test the biodegradative potential of the species. This process builds the voraciousness of the mycelium for petroleum, so when the mycelium is expanded from the petri dish to larger substrates it is more likely to take

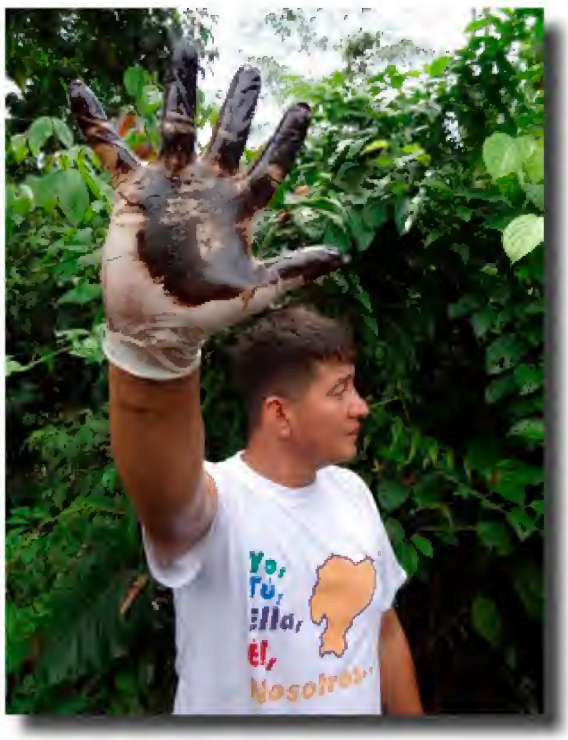
quickly to feeding on the petroleum.

The journey to learn about mycoremediation came at the emotional price of learning what needs to be remediated. We visited rainforests with ground water soaked with oil sitting in unlined pits that overflow to nearby rivers. It was eye opening how the irresponsible practices of Texaco (now owned by Chevron) and other oil companies have contaminated the environment and people. We met with the affected peoples whose ways of life have been horrifically altered after the river in which they play, wash clothes, bathe, and fish ran black with oil. Many tribes that lived along the contaminated waterways have died off. In the case of the Secoya, a tribe indigenous to Ecuador that was affected by the contamination, ponds were built to raise fish, rainwater catchment barrels were constructed for access to clean water, and a clinic was built to address the health concerns of the community. Since the contamination children had developed rashes and cancer had become more prevalent. We were honored to meet with members of this tribe and hear their stories, share our stories, and see how we could best help to heal their people, land, and water.

After the internship in Ecuador, I was inspired to continue my work with AMP. I created a video (http://vimeo.com/40419500) to help raise awareness and funds for more people to learn about mushrooms and mycorenewal design. I gave talks at colleges and mentored high school students interested in mycoremediation. I found it important for people to become aware of the environmental and human rights issues we face and to know what we can do to help. The internship gave me the in-depth knowledge I was searching for as an amateur mycologist and formed the basis of my pursuit to find ways to use mushrooms to help people and the planet.

From what I learned, the potential for mycoremediation's efficacy depends upon addressing a few main issues. The first is the bio-accumulation of heavy metals into mushrooms and mycelium. Incineration is a solution, though it is not best for the environment. Planting the heavy metal ridden mushrooms under hardwood trees with red wiggler worms will cycle the metals into the tree. This is a solution to storing the heavy metals for many years to come, though this process has drawbacks on a large scale and is labor intensive. The second issue of mycoremediation is related to scale. With 18.5 billion gallons of crude spread out in unlined pits in the Amazon and a 4:1 ratio of inoculated substrate to contaminated dirt, spawn adds up quickly.

AMP is tenacious and continues to seek remediation solutions. In the last year, AMP has partnered with ISTEC (Instituto Superior Tecnologico Crecermas), a center for higher education in the Sucumbios region of Ecuador. The university is implementing a bioremediation program for students and has invited AMP to be an intrinsic part of the process. The partnership is the answer to the most difficult issues facing AMP. Experiments in oil pits have been sabotaged more than once and a permanent presence in Ecuador is necessary for their efforts to be successful. The jungle boxes are effective for learning and practicing innovative, low-tech lab techniques but the cultivation success rate is low. The partnership with ISTEC gives AMP access to a laboratory with a flow hood, sterilizer, and a bulk pasteurizer. It guarantees an outside area for incubation and fruiting rooms as well as space to develop larger scale projects. ISTEC has a desire to develop a long-term bioremediation program for national and international students and AMP is glad to grow along with them. The progress I see in the last few years makes it easy for me to recommend volunteering with AMP and I would be glad to talk to anyone interested in doing so.



Donald Moncayo showing oil from Texaco's unlined pits on his property, which contaminated his wells. Rights to drill tens of thousand of gallons of oil on his land was given by the government. Donald was never consulted about permission to do so. He has never received a cent of the profits. Photo: John Michelotti

John Michelotti: (rcypher7@gmail.com)
Amazon Renewal Project: http://amazonmycorenewal.org/

AMI Grower Profile

New Shrooms on the Block

Juan Luis Mata, Ph.D., Email: jmata@southalabama.edu

A few years back, Tony and Leilani Rosenbaum discovered mushrooms. They credit the Gulf States Mycological Society (GSMS), NAMA President David Rust, Patricia Lewis and Dr. Juan Mata for their education So strong was their fascination, they named their 160-acre farm in Poplarville, MS "Shroomdom." They now produce more than 21 cultivated gourmet mushrooms to sell in their community, but their enthusiasm about fungi pushes them to do more. This Mississippi couple believes Shroomdom is a magical place where fungi play a central role for everyday activities from healthy living to forest ecology and sustainable agriculture. They envision Shroomdom as an institution promoting education and healthy lifestyles.

The couple use their farm as a source for a sustainable organic lifestyle in which 14 wild edible species are seen as a valued source of nutrition including four known medicinal mushrooms such as *Ganoderma lucidum* (anticancer); *Trametes versicolor* (#1 Fungi for breast cancer); *Hericium erinaceus* (the only known fungi to increase brain function); and *Auricularia auricula* (anti-coagulant).*

In their organic practice, aged mushroom blocks are used as composting for companion planting in their garden. Over production of their organic vegetables after selling to clients are donated to two local institutions, Brother's Keepers and Jacobs Well, both in Poplarville.

Mushroom production has increased, thanks to a very efficient in-house lab. Positive awareness of mushroom varieties and their health benefits has improved in the community as a result of ongoing instruction. Now, people have started to ask specifically for mushrooms such as pink oysters, shiitakes and namekos and other edible exotics. A goal is to partner with local chefs so they can include mushrooms in their daily menus.

Tony and Leilani are stewards of their land and live off it in harmony. They've coined the term "Field to Forest" meaning half of their food comes from what they get in the woods and the other half from what they grow and pick from their permaculture garden wrapped around their home.

Shroomdom has been designated as a unique site to visit within the Gulf Coast by the National Geographic Society, www.usgulfcoaststatesgeotourism.com. For more information call 601/795-2611.

**NAMA does not endorse the use of fungi for medicinal use, unless they have been proven useful to humans as a result of repeatable clinical Phase III trials.*

"Castle tree is thought to be over 300 years old and to be a bay tree, we begin all of our tours here and let people know they must first believe in the 3 M's of Mushrooms, Magical Mystical and Miraculous to be able to enter and see all the wonders the fungi Kingdom has to offer. We are all about Fun with the Fungi!" Lellani Rosenbaum

Michigan Mushroom Hunter's Club Education Committee Has High School Tech Center Students Make Club T-Shirts

By Sister Marie Kopin, C.P.P.S, Sandy Sheine and Huafang Su

The Michigan Mushroom Hunters Club (MMHC) Education Committee got involved this past year in a new kind of "mushroom education" project utilizing the services of the Graphic Arts classes at the Mount Pleasant, Michigan Technical Arts Center for High School Students, and their teacher Karen Lee. The classes assisted MMHC in designing and silk screening T-Shirts for our Michigan Mushroom Hunters Club to purchase. Together, Ken Cochran (recently deceased), former Executive Secretary of NAMA, and Marti Cochran, former Secretary of NAMA, and both members of MMHC, submitted a sketch for the basic idea for the design of the four seasons. Tia Fedor, a Tech class member, was the artist for the design. One of our teen age MMHC members, Josh Toney, who was a classmate of Tia Fedor, initiated the project. His graphic arts student classmates got many lessons about mycology, mushroom clubs, and working with our MMHC Education Committee in creating and printing a "4 seasons of mushrooms" design on Tshirts. Sister Marie spent many hours working with the classes from start to finish. Of course, many MMHC members benefited when they bought the shirts to wear.

The photos show how the T-Shirts turned out, a silk screening in progress by Josh who is supervised by his teacher, Mrs. Karen Lee, and the nice poster he created for our display at our annual Fungus Fest weekend in late September. Sister Marie Kopin, C.PP.S., spent many hours working closely with the classes to make sure that the Tshirts were finished before the end of the spring school term. This fall the classes made more T-shirts for the Club to sell.

Student Josh Toney, Teacher Ms.Karen Lee and Sister Marie wearing her new T-shirt Photo: Sister Marie Kopin

The poster designed by Josh Toney at the sales table at Fungus Fest of the MMHC Foray Photo: Jerry Sheine

Sister Marie and Josh Toney

Mycologists and members of NAMA's affiliated clubs are respectively urged to submit your nominations and supporting letters for the **2015 Award for Contributions to Amateur Mycology** and the **2015 Harry and Elsie Knighton Service Award** no latter than April 1st to the Awards Chairman, Gary Lincoff at the following address:

Gary Lincoff
Chair, NAMA Awards Committee
The New York Botanical Garden
2900 Southern Boulevard
Bronx, NY 10458-5126

For more information on the requirements for submitting nominations, see the NAMA website at: http://www.namyco.org/awards/index.html

WHO OWNS THE 'SHROOMS?

By Susan Goldhor

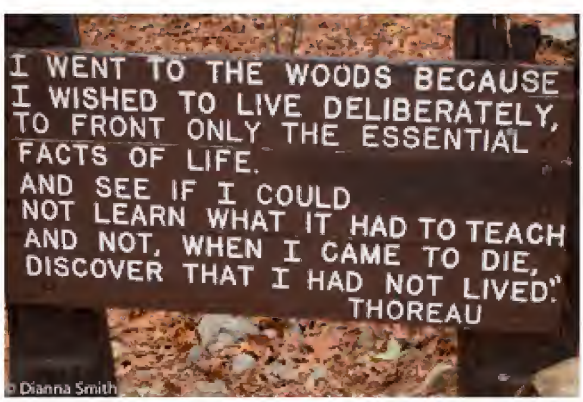
(origianlly published in the June 2014 issue of the Boston Mycological Club's newsletter, Bulletin)

Put it down to my having arrived at mycology late in life. Or maybe it's because I've been a solitary collector until recently. On the other hand, it could be due to my having pot-hunted mostly on trails that don't see a lot of use. And then again, maybe I'm just dense. Whatever it is, it's only recently that I've become aware of the tendency of my fellow mushroom hunters to believe (and we're talking pretty deep level belief here) that they own or somehow have a right to certain 'shrooms.

I first heard it from Ken, who makes his living selling the things. He claimed that someone had stolen his Hen of the Woods that he'd left to grow larger. Stolen? His? Pardon me? Is this like a fisherman cussing out the guy who catches the cod he let go last year because it was undersized? Then my pal Larry did the same thing. There we were, collecting on Concord conservation land, not too far from Walden Pond, and Larry was not happy because someone had come in since he was last there and taken his mushrooms. Another pal, Sarah, chimed in that she had her eye on some nice little Hens but someone had taken them before she judged them mature. But Sarah didn't say they were hers. (Is this a male/female thing?) Meanwhile, we were trawling the woods in a no-mushroom-left-behind foray, taking every edible for miles, including some delicious young sulphur shelfs that some poor clod had probably left to grow larger.

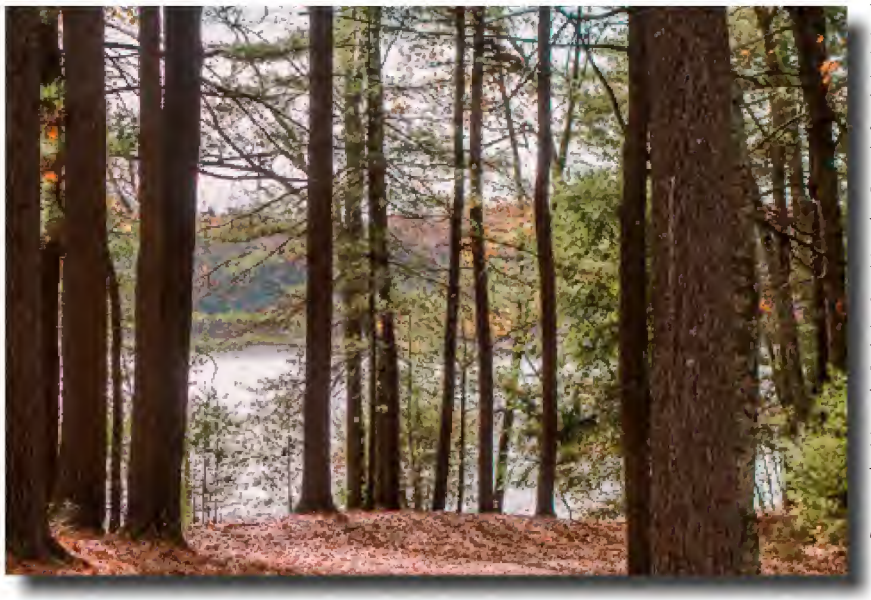
And then Larry introduced me to a further riff on this subject. He announced that his mushrooms had been stolen by Russians. This sounded to me like something left over from the Cold War. "How do you know?", I asked him. "Because they took all the boletes and all the russulas. And they left the entolomas and the *sulphureus*. That's what Russians do." I liked this idea – the concept of a mushroom detective. A 'shrooming Sherlock. This person could ID not only the fungi (by their crumbs and stumps) but their takers. Ethnicity alone would not be enough. A really good FI (Fungal Investigator) would be able to pin down the individual. "Aha! Look at how this stem has been cut! This is the work of Boris. I recognize the nick in his knife blade!"

The problem is, once we knew who took it, what could we do about it? Could we confront Boris and demand our russulas back? (They'd probably be eaten by that time anyway.) Could we sue for damages? Or mental cruelty? Of course not. We're all collecting off the same public land. And, for those of us who live in megalopolitan sprawl, there's a lot of foot traffic on anything resembling a trail through the woods.



Thoreau thought that he was living in an era when wilderness was being destroyed. In fact, he was. But he was able to get away from civilization and its discontents by moving two miles out of Concord to Walden Pond. By 1935 as many as 25,000 people a day were visiting Walden Pond. Forty years later, when DEM took over management, they put a limit on the number of people visiting; I suppose to maintain our sense of solitude and wilderness. The number they chose was 1,000 at any one time. Since folks cycle in and out, the number of annual visitors is actually about half a million; most during prime mushrooming season. And mind you, Walden Pond Reservation is no Yosemite. It's tiny. So – taking all of this into consideration – I have two suggestions.

The first is that I suppose we should be thankful that we get any mushrooms. When I think about the number of people tramping through the woods hereabouts, I can't believe that I filled my basket as full as I did, or that we got eight species of edibles. It's true that we didn't get many of most of those species. It's true that only four of



Walden Pond view close to site of Thoreau's one-room hut. Photo: Dianna Smith

those species were choice. It's true that I live in constant envy of those mycophiles in the Pacific Northwest who get giant baskets of chanterelles or those in Michigan who get hundreds of morels. I also live in envy of people who are Olympic skiers or Nobel laureates. Big deal. If, as I learned in high school, the primary characteristic of protoplasm is irritability, the primary characteristic of sentient life is probably envy. You know -- "I think, therefore I torture myself by imagining that you think better"?

The second is that when I examine the cause of our discontent, it's really that there are too many mushroom collectors out there. (In fact, there are too many people out there, but that's another issue.) There probably was some pre-lapsarian time when the Iron Curtain held entire nations of mycophiles at bay, and local collectors were few and far between. If you were lucky enough to be pot-hunting then, you really could wait for your Hens to grow without anxiety, and regard all flushes as yours. Those days are gone. But, fellow mycophiles, let me ask you a tough question. Every mushroom club in America (probably in the world) is working hard to create new collectors. We hold classes. We invite any and all to become members. We lead forays over our entire region in our self-defeating attempt to show everyone every possible collecting area. We push mushrooming! What is wrong with us? Don't we see the connection between the burgeoning of our memberships and the emptiness of our baskets?

Home owner's message to *Grifola Frondosa* seekers: "HANDS OFF! DARN MUSHROOM RUSTLERS" Photo: Noam Schatz

There is only one solution. Dissolve the clubs. Take the mycosites off the Web. Compost the books (except for those we own, of course). Or burn them, if you think that will add to the morel population next spring. Stop talking publicly about the joys of foraging. Do you realize that Larry – that same Larry who mourned the disappearance of his mushrooms – told me that he was offering a lecture on fungi and a walk in the very woods in which the disappearance had occurred? Doesn't he see the cause and effect?

Friends, we must take our cue from the fungi we love so well. We must go underground. No more loose lips. No more club PR. No more exhibiting at garden shows or holding mushroom fairs. No more proselytizing everyone we meet in the woods. If you must talk about mushrooms, you might wish to discuss the variety of symptoms caused by the toxic ones. Liver transplants are always a good topic. Let's bring back the fine old expression, "toadstool", with all of its unsavory connotations. And for goodness sake, stop using those open baskets where everyone can see what you're doing. In short, no more self-destructive, masochistic behavior. A decade or more of this and the tide will have turned. We will own the 'shrooms!

NAMA's 2015 FORAY!

By Jackie Shieb

The Blue Ridge Mountains – a vista of mountain ridges and peaks that seen from a distance take on a blue cast, rising to the highest peak of Mt. Mitchell at 6,684 feet – is the location for the NAMA Annual Foray in 2015. The Asheville Mushroom Club and the Mushroom Club of Georgia will jointly host the event in the last weekend of September in the Blue Ridge Assembly, near Asheville, North Carolina.

The Blue Ridge is the section of the Appalachian mountains that runs from Virginia to Georgia. Clothed in one of the most biologically diverse forest communities in the world, it contains half of all the tree species know in the USA and includes the Great Smoky Mountains National Park, where about 2500 species of fungi have been identified. AMC's own species list stands at 900 and, with the NAMA foray participants gathering and the professional faculty identifying, we confidently expect to expand this total.

The event will be held at the YMCA Blue Ridge Assembly in Black Mountain, NC. It is a full-service conference center situated on 1200 acres of wooded mountainside beautified by mountain streams, wildflowers, ridges, coves, and spectacular views. A combination of historic and modern buildings provide a variety of accommodations ranging from comfortable small dormitories to hotel-style rooms. Most rooms will have en-suite bathrooms. There are options for camping nearby. Asheville Regional Airport is an easy 30-mile drive away.

Nearby Asheville (18miles) is a destination in itself, noted for its Art Deco buildings, art galleries and craft stores, and upwards of 15 craft breweries.

We are in the process of inviting faculty and creating the program of lectures,workshops, field trips and social events to run from Thursday afternoon Sept.24 to midday on Sunday Sept.27.

Look for the registration process to start early in spring, but meanwhile mark your calendar for **September 24-27, 2015**.

Please welcome Barbara Ching, PhD, our new Executive Secretary!

I have loved mushrooms since my grandmother first introduced me to them in their canned form—rubbery blobs swimming in a buttery liquid, heated and set on the dinner table. In Iowa, where I grew up and where I live now, wild mushrooms mean "morels" to most people. Thanks to the Prairie States Mushroom Club, I know much more about what else can be found here and how to identify those finds. I also get lots of help from the scientists at Iowa State University, where I am chair of the English department. I was so flattered last year when The Mycophile reprinted my Prairie States newsletter article about cooking with tree ears, and now I am looking forward to working with all of the mycophiles in NAMA.

Please welcome Steve Bichler, our new Membership Secretary!

Four years ago Steve was searching the web for local mushroom clubs and came across the South Sound Mushroom Club (SSMC) in Olympia, WA. He attended a meeting and was hooked. One year later he took over as the SSMC webmaster and redesigned the SSMC website. He also became the club's newsletter editor. Steve assists with mushroom identification workshops, and leads forays with club members. During the fall there usually isn't a weekend that goes by where Steve isn't out in the forest hunting, collecting or photographing mushrooms of the Pacific Northwest.

When Will 2015's Morels Pop?

By Willow Nero (Editor of *McIllvainea: Journal of American Amateur Mycology*)

You can play along with all the folk tales, *Famer's Almanac* predictions, and that old-timer in your club who insists he feels the will of the morels in his bones — or you can outsmart those saps and take the advice of Dr. Jeanne D. Mihail, a professor of plant sciences at the University of Missouri. In her region, *Morchella esculentoides* typically shows up after soil warming accumulation of 410° F over a 20-day interval. Read Mihail's results in "Is It Time for Morels Yet?" *McIlvainea: Journal of American Amateur Mycology* (http://namyco.org/publications/mcilvainea/v23/time_for_morels.html) and start petitioning your local club to buy a soil temperature logger. Morel season waits for no one!

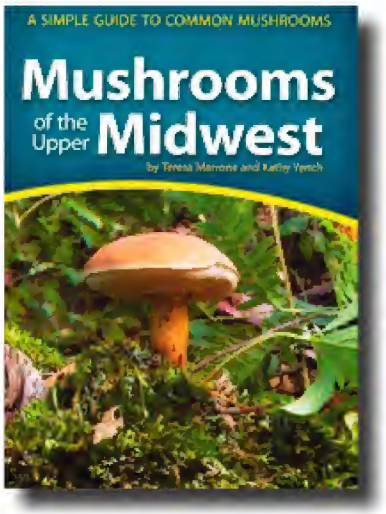
Calling All Academics and Citizen Scientists

Submit your papers, articles, and presentation summaries to NAMA's *McIlvainea: Journal of American Amateur Mycology.* Willow Nero, current *McIlvainea* editor, is available to discuss and advise authors about possible article topics and directions. Let *McIlvainea*'s online archives inspire your submissions. We might be a journal, but we strive for readability among the amateur community. Not every article requires extensive citations, charts, and stodgy terminology (though those are welcome, too!) For starters, try replicating Mihail's experiment in your neighborhood (see above).

Some Fun Mushroomy Online Links:

1. A three-dimensional rendering of *Amanita muscaria* - http://youtu.be/hwQ1UYlmyMI
2. From the polished new website *Fantastic Fungi* is a free eBook entitled *Fifty Fungi Facts* by Eugenia Bone: http://fantasticfungi.com. There are several other interesting links on the site's Home page, all of which are worth checking out.

Mushrooms of the Upper Midwest: A Simple Guide to Common Mushrooms



Teresa Marrone and Kathy Yerich
2014, Adventure Publications, Cambridge, MN
www.adventurepublications.net / 1-800-678-7006
ISBN: 978-1-59193-417-2 (288 pages, softcover, $16.95)

This is a small (roughly 4.5 × 6 inches) guide that, as the title states, deals with mushrooms commonly encountered in the upper Midwest (the Dakotas, Illinois, Indiana, Iowa, Michigan, Minnesota, and Wisconsin). It "was written with the beginning mushroom enthusiast in mind." The publisher's notes suggest that nearly 400 species are covered but that number must include pretty much every species mentioned anywhere, as the number of well described and illustrated species is much smaller. Nearly all the species also occur widely outside the subject area and most are covered in many other books.

Both authors are long-time foragers for wild foods. Teresa Marrone has written a number of outdoor-themed books as well as cookbooks featuring wild foods. She lives in Minneapolis. Kathy Yerich, who lives in Forest Lake, Minnesota, is a member of the Minnesota Mycological Society. Both contributed photographs to the project.

The introductory material is brief, comprising only about 15 pages. It includes the rationale behind the book, an explanation of what mushrooms are and how to look at them, cautions for eating them, and a bit of basic fungus biology. This is followed by an explanation of how best to use the book, a description of the ten morphological groups (cap and stem with gills, cap and stem with pores, coral and club fungi, etc.) used to organize one section of the book, and the species accounts. A list of books and websites, glossary, and index follow the species treatments.

The species accounts occupy 242 pages, broken down into three main sections—"top edibles," "top toxics," and "mushrooms grouped by type." Other than the description of the morphological types, there are no keys or other identification aids. The reader is directed to look for picture matches, starting with the morphological groups.

Reddish Russulas (several)

HABITAT: Growing from the ground, singly or in small groups near living, dead, or decaying deciduous or coniferous trees, they are mycorrhizal, growing in a symbiotic relationship with living trees.

DESCRIPTION: Like other *Russula* species, reddish Russulas have **sturdy stems that lack rings**. Caps on young specimens are rounded, spreading and flattening out with age, then turning upward to form a shallow, wide-rimmed bowl; some or much of **the skin can be peeled off the cap**. Gills of species discussed here are closely spaced and attached to the stem or running slightly down it; flesh is white and **brittle**. • The cap of Rosy Russula (*R. sanguinea*, also called *R. rosacea*) is **sticky** and **rosy-red** when young, fading with age, 4 to 2 to 4 inches wide. The stem is **pinkish**, or **whitish with a rosy blush**, it is 2 to 4 inches tall. Gills are creamy to yellowish-white; it grows under pines. • The Sickener (*R. emetica*) has a **shiny reddish** cap up to 3 inches across; the center of the cap is typically sunken. The stem is up to 4 inches tall and white to pale yellow. Gills are white to yellowish; white; it typically grows in **mossy areas** such as bogs (part ocularly, sphagnum) in coniferous or mixed-wood forests. • Shrimp Russula (*R. xerampelina*) has a cap up to **6 inches** across that is often **wine-red or dull purple** but may vary quite a bit in color; its stem is 2 to 3 inches tall and white, sometimes with a reddish blush. Gills are yellowish to **orangish-yellow**, both stem and gills **bruise brownish**. Shrimp Russula has a **fishy odor**; it grows in coniferous or mixed-wood forests.

SPORE PRINT: **Pale yellow to creamy**. Shrimp Russula's are **yellowish-orange**.

SEASON: Midsummer through mid-fall.

OTHER NAMES: *R. emetica* is also called the Vomiting Russula.

COMPARE: Wine Caps (pp. 186) are edible and have burgundy to reddish brown caps, but they grow on **wood chips or mulch**, and the stems have a **distinct ring**. Their spore print is **purplish-brown to blackish**.

NOTES: The Sickener, as might be guessed from its name, is **TOXIC**, causing severe intestinal problems. Rosy Russula is acrid and should not be eaten. Shrimp Russula is considered a good edible as long as its identity is confirmed.

Unfortunately, separating out the main edible and poisonous species makes the user have to look in three different sections of the book before deciding whether (s)he has found a match for the mushrooms in hand. Within the morphological groups, the species are organized by color, proceeding from light to dark, which leads to juxtapositions such as an agaricus following a lactarius, which is confusing for someone with some experience and makes it hard for a beginner to begin developing a feel for the Friesian genera that form the basic framework for learning mushroom identification.

The "species" accounts include a number of groups, such as morels, toxic boletes, and earthstars, in addition to descriptions of single species. The content of the entries varies. The headings are all common names, with the scientific names in a much smaller font beneath them. Information categories include Habitat, Description, Spore print, Season, Other names, Compare, and Notes although, for many species, not all are included. The page edges are color-coded to facilitate finding the edibles (green), toxics (red), and morphotype (ten different colors) sections. The pages also include several icons for those same groupings, plus habitat and fruiting season. I didn't find the icons useful as they merely repeat information in the descriptions and also include adjacent tiny-font text explaining their meanings. The more important features of the fungus are highlighted in the text through use of a colored boldface font. The photographs vary in size from nearly a whole page down to roughly one-eighth of a page. They are generally of very good quality and most show the key features well.

While reading the book, I encountered a few things that puzzled me. A tiny handful of slime molds is included. They aren't mushrooms and, even though some are included in several other books, presenting a handful isn't going to be all that helpful to someone interested in these organisms. Better to have devoted the pages to more mushrooms. More than once, the authors emphasize the value of scientific names and the limitations of common names but they then use common names, rather than scientific ones, in the main headings, photo captions, and text. Perhaps few users would read the book from cover to cover but, in my doing so, it got very annoying to read over and over and over again that "this species is mycorrhizal, growing in symbiotic association with living trees" and "they are saprobes, getting nutrients from dead organic matter." The mushroom lifestyle terms are explained in the introduction and they are included in the glossary so there is no need to explain them nearly every time they are used in the descriptions.

The information presented generally is accurate. However, there are a few glitches. One of the photos representing *Laccaria laccata* shows a large number of mushrooms fruiting amongst wood chips, not a typical habitat for that species. They are probably tubarias. *Gomphus clavatus* is not closely related to chanterelles, even though it is similar-looking, and no one I have ever asked considers it a choice edible. *Omphalotus illudens*, the jack o' lantern of eastern North America, is said to have caused deaths. If so, that is news to me and those knowledgeable fellows on NAMA's Toxicology Committee. Ditto for *Coprinellus micaceus*, the mica cap, causing the "Antabuse" reaction. Chaga is not the only black clinker—*Phellinus tremulae* produces similar growths on aspens. Crust fungi are not all saprotrophs, many of them are ectomycorrhizal. Several of the glossary definitions are either incorrect (e.g., "fungus", the examples given for "marginate," "volva," and "white rot") or not very clear (e.g., those for "genus" and "kingdom").

Nevertheless, this is not a bad little book. It isn't very expensive and using it might help a beginner decide whether mushrooms are something worth learning more about. However, I'm skeptical about how well it will help people start learning to identify mushrooms. I fear that not grouping the species by the traditional Friesian genera will prevent the newcomers from beginning to develop a feel for what, for example, an amanita, russula, or cortinarius is, and that is an essential first step in becoming skilled at mushroom identification. As for mushroomers with some experience (remembering that this is not the book's target audience), nearly all the species can be found in many other field guides, so adding this to an existing library would probably not increase one's ability to identify many things. However, if your library is still small, this could be a handy addition.

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Newsletter of the North American Mycological Association
THE MYCOPHILE

Mushroom of the Issue

Phlebia tremellosa Photo: Tom Bigelow

I count myself as lucky that *Phlebia tremellosa* is so common in New York City parks during fall and winter months. *Phlebia tremellosa* is a saprobe, causing white rot primarily in hardwood. Often resupinate, it also forms whitish caps, which can be quite hairy. The fertile surface is made up of erratic, branching, crisscrossing veins and folds, with colors ranging from yellowish, pinkish-orange, tan-orange-red. It's terrifically photogenic – this one looking like the Devil's Tower in miniature.

Tom Bigelow of NYMS